

# Finnish Pre- and In-Service Teachers' Conceptions, Values and Teaching Practices in Teaching of Health and Environmental Knowledge

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## Abstract

Teaching of health and environmental knowledge in Finnish schools is guided by the national core curriculum and school curriculum. However, teaching practices are influenced to some extent also by teachers' own conceptions and systems of values. The aim of the study was to survey Finnish pre- and in-service teachers' conceptions concerning teaching of health and environmental knowledge as well as their attitudes and values related to environment. Teachers (n=312) appreciate and see their value at school in improving pupils' behaviour. However, they point to a consistent lack of time or/and inadequate training. Teachers in general own positive attitudes towards the nature, although biologists seem to be more nature-centred compared to other teachers.

## Introduction

"Responsibility for the environment, well-being and sustainable future" is one of the seven cross-curricular themes for basic education in Finland (Finnish National Board of Education 2004). Teaching of both, health and environmental knowledge, are integrated into several subjects where teachers of different scientific backgrounds teach these subjects. In addition school health care involves health education at school. Generally, the teaching of environmental and health knowledge (Health Knowledge is defined by the Finnish legislation) are taught in Environmental Studies in the grades 1 to 4, in Biology and Geography, and in Physics and Chemistry in the grades 5 to 6. Health education is also part of Physical Education. In a secondary school Health Knowledge (2006) became an independent subject but is also taught in Home Economics, Biology, and Physical Education. Environmental knowledge is still integrated in Biology, Geography, Physics, Chemistry and Home Economics. In addition, sustainability themes are incorporated into several subjects such as Ethics, Visual Arts, Crafts, Languages, and Social Studies (cf. Finnish National Board of Education 2004).

The teaching of health and environmental knowledge is guided in schools by the curriculum which is based on relevant pedagogical theories. However, teaching practices are influenced to some extent also by teachers' conceptions and systems of values. Data on teachers' attitudes and values related to health and environmental issues is scanty. In this study we wanted to monitor Finnish teachers conceptions with regard to health and environmental education, as well as their attitudes and values related to environment. The study is part of the EU-funded BIOHEAD-citizen project that has been conducted in 19 countries.

### **Subjects and Methods**

Data were obtained by using a reliable and valid questionnaire (n=312) by using a convenience sampling (schools, universities and national teacher meetings in five different locations). The respondents were pre- and in-service teachers in Biology, Home Economics and Finnish language teachers as well as in primary school.

The questionnaire consisted of Likert scaled questions about Health and Environmental knowledge and Ecology, Human Reproduction, Sexual Knowledge, Human Brain, Human Genetics, and Human Origin. In about half of the questions respondents were asked to indicate to what point they agree the statement. Responses were scored on a four-point scale ranging from 1 (I agree) to 4 (I do not agree). Data was analyzed by using SPSS statistical software.

### **Results**

#### *Health Knowledge*

Most of the respondents (78 %) rated the teaching of health knowledge important for pupils' health behaviour and consequently 89 % saw the principal goal being rather to correct on pupils' health behaviour than providing the pure knowledge. There were some substantial differences between groups. Humanists (Home Economics, Finnish language and primary school teachers/students) were significantly more optimistic about the effectiveness than biologists ( $p < .01$ ) and teachers compared to students emphasized even more developing of health behaviour as the aim of health knowledge ( $p < .05$ ).

When asked about the obstacles of teaching health knowledge almost half of the teachers (48 %) who had actually taught it (n=73) reported the lack of time or adequate material. Every third of the teachers (31 %) said that they did not have proper education for this purpose.

Table 1. The most important obstacles in teaching health knowledge.

<b>Obstacle</b>	<b>n</b>	<b>%</b>
I do not have enough time or adequate material.	35	48
I have not got adequate training in health education.	23	31
It is hard to find partners to cooperate with.	7	10
Parents may react badly.	7	10
I find talking about some subjects embarrassing.	1	1
<b>Total</b>	<b>73</b>	<b>100</b>

When asked about sex education 32 % of respondents thought that teachers avoid teaching sexual matters because these topics are private and should not to be taught at school. Humanists reported this reason significantly more often than biologists ( $p < .01$ ) and students more often than teachers ( $p < .001$ ).

According to respondents some of the sexual topics should be introduced already at primary school at the age of 6 to 11 or even before that, and others later in secondary level. The majority (55 %) of the respondents thought that pregnancy and birth should be introduced already at the age 6 to 11 years old, and 25 % thought that even before 6 years. Some of the respondents (40 %) would speak about incest and sexual abuse at primary school age but some others (39 %) later in secondary school age. Most respondents thought that sexual intercourse (54 % of respondents), orgasm and sexual pleasure (69 %) as well as eroticism and pornography (52 %) should be taught in age 12 to 15 years. Some of the respondents thought that certain subjects should never been introduced at school, e.g. eroticism and pornography (15 % of respondents).

### *Environmental Knowledge*

Most respondents (95 %) reported that the goal of teaching environmental knowledge was the development of pupils' responsible behaviour more than providing pure knowledge. Humanists and secondary school teachers emphasized this significantly most often ( $p < .05$ ).

When looking the questions indicating respondents' attitudes towards the nature (Table 2) we found that most respondents enjoyed the trips to the countryside and were interested in ani-

mals in ponds and rivers. However, biologists ( $p < .001$ ) and teachers in general compared to students ( $p < .01$ ) were significantly more interested to know the animals in ponds and rivers. Industrial smoke from chimneys made almost 60 % of the respondents angry. Most of the respondents (93 %) thought that we should aside areas to protect endangered species.

Every third teacher thought that human beings are more important than other living beings. There were significant differences between biologists and humanists ( $p < .001$ ) as well as between students and teachers ( $p < .05$ ). Just some of the biologist (17 %) but much bigger percent of humanists (40 %) thought that the human being is more important than other living beings. Also students considered human being most important. Nevertheless, only 27 % of the respondents thought that humans have the right to change nature as they see fit. There were statistically differences between primary and secondary school teacher/students ( $p < .05$ ).

Table 2. In-service and pre-service teachers' conceptions about health education and attitudes towards nature.

Statement	I agree		I do not agree		Differences in educational background		
	1	2	3	4	BI-HU	ST-TE	PS-SS
	(%)	(%)	(%)	(%)			
Health education at school improves pupils' behaviour. (n=310)	21	57	19	3	*** <sup>1)</sup>		
Teachers avoid teaching sex education because these topics are private and are not to be taught at school. (n=310)	6	26	33	35	***	***	
I enjoy trips to the countryside. (n=312)	78	20	2	0,3			
It is interesting to know what kinds of animals live in ponds or lakes. (n=311)	64	27	6	3	***	***	
Industrial smoke from chimneys makes me angry. (n=312)	11	48	32	9			
We must set aside areas to protect endangered species. (n=312)	65	28	5	2	*** <sup>1)</sup>		
Human beings are more important than other living beings. (n=311)	10	21	31	38	***	*	
Humans have the right to change nature as they see fit. (n=312)	3	24	39	34			*

Note: BI = biologists, HU = humanists; PR = pre-service teachers, IN = in-service teachers;

PS = primary school teachers, SS = secondary school teachers

\*  $p < .05$ , \*\*  $p < .01$ ; \*\*\*  $p < .001$ , Chi-Square Test ( $\chi^2$ ) used if possible

<sup>1)</sup> Mann-Whitney Test

## **Conclusion**

In this study we have described some of the Finnish teachers' teaching practices and opinions about teaching of health and environmental knowledge. Detailed analysis of the data obtained is still on process and only after that we know more about their teaching practices, conceptions and values. The present data showed that teachers appreciate and see the value of teaching of health and environmental knowledge at school in improving pupils' behaviour. Problem was that they do not have time and/or adequate training. There is also a lack of appropriate study material. It seems also that biologists are more nature centred than other teachers.

## **References**

Finnish National Board of Education. (2004) National Core Curriculum for Basic Education 2004. Opetushallitus, Vammala, Finland.